WHAT IS CLAIMED IS:

1.   A method for routing a packet comprising:

receiving the packet from one of a plurality of address domains through one of a plurality of interfaces; and

determining one of a plurality of routing tables for the packet according to a mapping array, the mapping array including pointers that associate the interfaces with the routing tables.

2.   The method of claim 1 further comprising executing a single IP stack to receive the packet and determine the one routing table.

3.   The method of claim 1 wherein the mapping array associates interfaces connecting to the same address domain with the same routing table.

4.   The method of claim 1 further comprising, after the one routing table is determined, forwarding the packet according to the one routing table if the packet is a data packet.

5.   The method of claim 1 further comprising, after the one routing table is determined, updating the one routing table if the packet is a route update packet.

6.   The method of claim 1 wherein each of the plurality of address domains represents a virtual private network.

7.   A router comprising:

interfaces through which packets from address domains are received; and

a domain manager, which includes a mapping array for determining one of a plurality of routing tables for the received packets, the mapping array including pointers that associate the interfaces with the routing tables.

8.   The router of claim 7 wherein the domain manager executes a single IP stack to receive the packet and determine the one routing table.

9.   The router of claim 7 wherein the mapping array associates interfaces connecting to the same address domain with the same routing table.

10.   The router of claim 7 wherein the domain manager forwards the packet according to the determined one routing table if the packet is a data packet.

11.   The router of claim 7 wherein the domain manager updates the determined one routing table if the packet is a route update packet.

12.   The router of claim 7 wherein each of the plurality of address domains represents a virtual private network.

13.   A computer program product residing on a computer readable medium comprising instructions for causing the computer to:

receive the packet from one of a plurality of address domains through one of a plurality of interfaces; and

determine one of a plurality of routing table for the packet according to a mapping array, the mapping array including pointers that associate the interfaces with the routing tables.

14.   The computer program product of claim 13 further comprising instructions for causing the computer to execute a single IP stack to receive the packet and determine the one routing table.

15.   The computer program product of claim 13 wherein the mapping array associates interfaces connecting to the same address domain with the same routing table.

16.   The computer program product of claim 13 further comprising instructions for causing the computer to, after the one routing table is determined, forward the packet according to the one routing table if the packet is a data packet.

17.   The computer program product of claim 13 further comprising instructions for causing the computer to, after the one routing table is determined, update the one routing table if the packet is a route update packet.

18.   The computer program product of 13 wherein each of the plurality of address domains represents a virtual private network.